CLAIMS

1. A Scintillation Proximity Assay (SPA) for the detection of peptidoglycan synthesis.

2. An assay for detecting peptidoglycan synthesis, which comprises the steps of:
(1) incubating a reaction mixture comprising in aqueous medium a UDP-*N*-acetylmuramylpentapeptide, radiolabelled UDP-*N*-acetyl glucosamine, a source of divalent metal ions, a source of undecaprenyl phosphate, a source of peptidoglycan, a source of translocase enzyme, a source of transferase enzyme, a source of transglycosylase enzyme, a source of transpeptidase enzyme and a source of lipid pyrophosphorylase enzyme, under conditions suitable for peptidoglycan synthesis;
(2) adding a divalent metal ion chelator compound to the reaction mixture of step (1);
(3) adding lectin-coated beads impregnated with a fluorescer to the reaction mixture of step (2); and
(4) measuring light energy emitted by the fluorescer.

3. An assay according to claim 2, wherein the UDP-*N*-acetylmuramylpentapeptide is UDP-Mur*N*Ac-L-alanine-γ-D-glutamic acid-m-diaminopimelic acid-D-alanine-D-alanine.

4. An assay according to claim 2 or claim 3, wherein bacterial cell membranes represent a source of one or more of undecaprenyl phosphate, peptidoglycan, translocase enzyme, transferase enzyme, transglycosylase enzyme, transpeptidase enzyme and lipid pyrophosphorylase enzyme.

5. An assay according to claim 4, wherein the bacterial cell membranes are from *Escherichia coli*.

6. An assay according to any one of claims 2 to 6, wherein the reaction mixture of step (1) further comprises a test compound.

7. An assay according to claim 6, wherein the test compound is an antagonist of one of the enzymes.

8. An assay according to any one of claims 2 to 7, wherein ethylenediaminetetraacetic acid is used as the divalent metal ion chelator compound in step (2).

9. An assay according to any one of claims 2 to 8, wherein the lectin-coated beads comprise wheatgerm agglutinin.